AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the present application:

Claims 1-5 (Cancelled).

6. (Original) A process for producing an unsaturated carboxylic acid, which comprises subjecting an alkane or a mixture of an alkane and an alkene to a vapor phase catalytic oxidation reaction in the presence of a catalyst containing a mixed metal oxide having the empirical formula $A_aD_bE_cX_dO_e$

wherein A is at least one element selected from the group consisting of Mo and W, D is at least one element selected from the group consisting of V and Ce, E is at least one element selected from the group consisting of Te, Sb and Se, and X is at least one element selected from the group consisting of Nb, Ta, Ti, Al, Zr, Cr, Mn, Fe, Ru, Co, Rh, Ni, Pt, Sb, Bi, B, In, As, Ge, Sn, Li, Na, K, Rb, Cs, Fr, Be, Mg, Ca, Sr, Ba, Hf, Ag, Pb, P, Pm, Eu, Gd, Dy, Ho, Er, Tm, Yb and Lu; and a = 1, b = 0.01 to 1.0, c = 0.01 to 1.0, d = 0.01 to1.0, and e is dependent on the oxidation state of said other elements, said catalyst composition having been formed from calcining an admixture including catalyst precursors and a source of NO_x for improving catalytic performance.

7. (Original) The process according to claim 6, wherein said source of NO_x is selected from nitric acid, ammonium nitrate, ammonium nitrite, NO, NO_2 or a mixture thereof.

8. (Original) The process according to claim 6, wherein said source of NO_x is nitric acid.

9. (Original) A process for producing an unsaturated nitrile, which comprises subjecting an alkane, or a mixture of an alkane and an alkene, and ammonia to a vapor phase catalytic oxidation reaction in the presence of a catalyst containing a mixed metal oxide having the empirical formula $A_aD_bE_cX_dO_e$

wherein A is at least one element selected from the group consisting of Mo and W, D is at least one element selected from the group consisting of V and Ce, E is at least one element selected from the group consisting of Te, Sb and Se, and X is at least one element selected from the group consisting of Nb, Ta, Ti, Al, Zr, Cr, Mn, Fe, Ru, Co, Rh, Ni, Pt, Sb, Bi, B, In, As, Ge, Sn, Li, Na, K, Rb, Cs, Fr, Be, Mg, Ca, Sr, Ba, Hf, Ag, Pb, P, Pm, Eu, Gd, Dy, Ho, Er, Tm, Yb and Lu; and a = 1, b = 0.01 to 1.0, c = 0.01 to 1.0, d = 0.01 to1.0, and e is dependent on the oxidation state of said other elements, said catalyst composition having been formed from calcining an admixture including catalyst precursors and a source of NO_x for improving catalytic performance.

10. (Original) The process according to claim 9, wherein said source of NO_x is selected from nitric acid, ammonium nitrate, ammonium nitrite, NO, NO_2 or a mixture thereof.

11. (Original) The process according to claim 9, wherein said source of NO_x is nitric acid.

12. (Original) An improved catalyst composition, comprising:

a mixed metal oxide having the empirical formula $A_aD_bE_cX_dO_e$,

wherein A is at least one element selected from the group consisting of Mo and W, D is at least one element selected from the group consisting of V and Ce, E is at least one element selected from the group consisting of Te, Sb and Se, and X is at least one element selected from the group consisting of Nb, Ta, Ti, Al, Zr, Cr, Mn, Fe, Ru, Co, Rh, Ni, Pt, Sb, Bi, B, In, As, Ge, Sn, Li, Na, K, Rb, Cs, Fr, Be, Mg, Ca, Sr, Ba, Hf, Ag, Pb, P, Pm, Eu, Gd, Dy, Ho, Er, Tm, Yb and Lu; and a = 1, b = 0.01 to 1.0, c = 0.01 to 1.0, d = 0.01 to1.0, and e is dependent on the oxidation state of said other elements;

wherein said catalyst composition has been treated to exhibit peaks at X-ray diffraction angles (2θ) of 22.1°, 27.1°, 28.2°, 36.2°, 45.2°, and 50.0°, with a relative increase in a diffraction peak at said diffraction angle (2θ) of 27.1 degrees when compared with an untreated catalyst of like empirical formula.